

Dichroic Color Filters

High Transmission / Narrow Tolerance Dichroic Color Filters

Materion Balzers Optics shift-free color filters are dielectric coated interference filters which transmit certain regions of the visible spectrum and reflect others with the highest possible degree of efficiency. The filters are manufactured with the Materion Balzers Optics proprietary sputter technology which makes them extremely stable to changing operating temperatures and harsh environmental conditions.



Benefits

- Sharp spectral separation between transmission and reflection with highest transmission and reflection values
- Spectral stability at changing operating temperatures and humidity (shift-free)
- Narrow cut-on/cut-off tolerances ($\leq 1\%$) and excellent spectral uniformity
- Highest scratch and mechanical resistance
- Virtually absorption free for utmost transmission and reflection efficiency and minimum thermal stress
- Aging and fading free colors
- Ultimate color saturation
- Widest flexibility in custom designed colors, polarization planes, angles of incidence (AOI), substrate material and dimensions
- Engineering support for custom designed color management systems
- Specification in CIE chromaticity coordinates with luminous transmission for signal lighting applications

Applications

DT color filters are used in color management systems for projection displays. Today's most popular application is the Materion Balzers Optics ColorWheel™, one of the key components in digital projection systems.

Technical Data

Colors

Customized colors on request

Angles of incidence

0° ($\pm 15^\circ$), other angles on request

Substrate material

Heat resistant borosilicate glass,
other materials on request

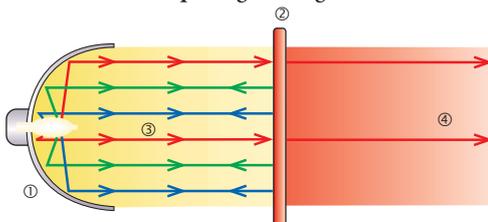
Temperature stability

up to 350°C (mechanical and spectral)

Dimensions

Available 160 x 110 mm x 1.1 mm,
other dimensions on request

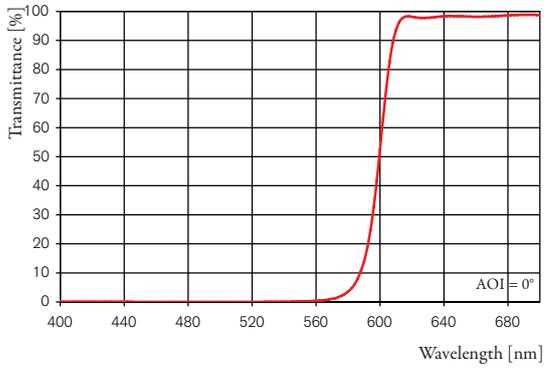
Schematic of color splitting showing dichroic color filter



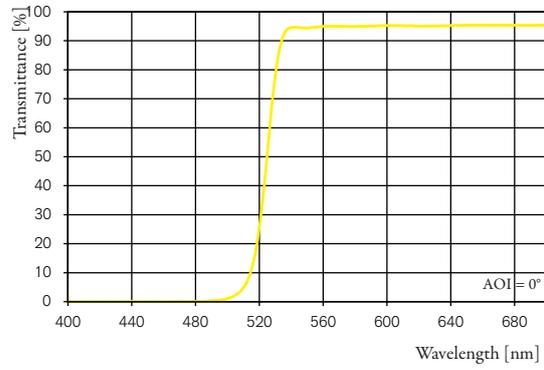
- ① Lamp with cold light reflector
- ② Dichroic color filter
- ③ Visible light
- ④ Transmitted color



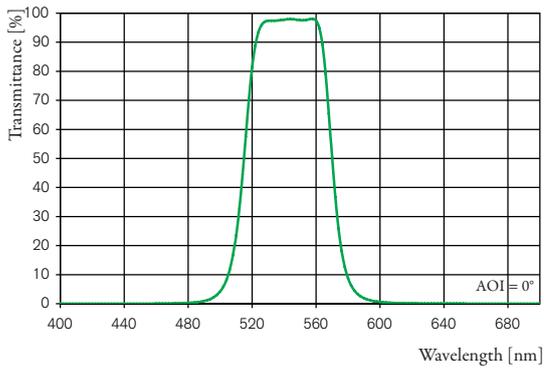
DT-Red
Principle curve



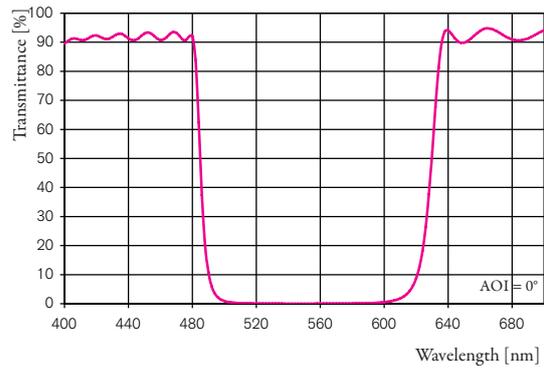
DT-Yellow
Principle curve



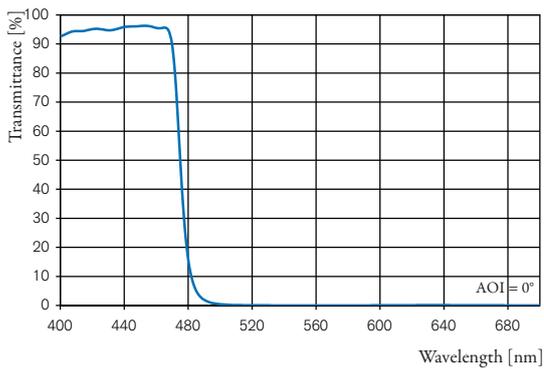
DT-Green
Principle curve



DT-Magenta
Principle curve



DT-Blue
Principle curve



DT-Cyan
Principle curve

